

Jack Dohany
390 Rutherford Ave
Redwood City, CA 94061
(415) 367-7781
AUGUST 1987

*** PRX ***

WHAT IT IS: PRX is an experimental printer driver that ultimately will be capable of driving any known printer interface. It will have many features, including full graphics capability, word-wrap, justification, centering and so on.

PRX at present does NOT include word-wrap, justification or centering, and drives only the AERCO printer interface. It does however include full LPRINT/LLIST graphics capability. It does NOT provide screen-copy facilities, though these may be provided separately (as with BAX64).

WHERE IT IS: PRX occupies about 600 bytes of memory, from Loc 61500. At present, PRX is provided as part of BAX64 and FONTMAN, and need not be loaded separately. PRX is not relocatable, but can be provided to work in other areas of memory upon request.

PRX works best best with Epson-compatible dot matrix printers that have bit-image modes initiated with the control sequences ESC "K" or ESC "L". If your printer has bit-image modes but is not Epson-compatible, contact me for assistance.

HOW IT WORKS: If the GRAPHICS FLAG is ON (as it initially is), and the CONTROL FLAG is OFF (as it initially is), then your printer should EMULATE the 2040 printer when LPRINT or LLIST are used. That is, the current 2068 character set is used for printing, rather than the printer's built-in fonts.

Just as with the 2040, you can print in INVERSE. You can use the 16 "standard" graphics characters (decimal codes 128-143) as well as the 21 UDG characters (decimal codes 144-164). -See pages 243, 153-157, and 163 of 2068 USER MANUAL. Also, you can make the current 2068 character set look however you want it to, using the companion program FONTMAN.

A number of locations can be POKED to govern how PRX works; these will be described in some detail. Each such location has a name for reference purposes.

USING PRX: the PRX printer driver is normally loaded and activated by other software (such as BAX64 or FONTMAN), so all the user need normally do is LPRINT or LLIST as usual, of course making sure the AERCO Centronics interface and printer are connected.

Any BASIC program not using memory above Loc 61500 can be loaded after BAX64 or FONTMAN have loaded and activated PRX. If PRX should become "de-activated", it can be re-activated with: RANDOMIZE (or PRINT) USR 61500.

**** LIST OF LOCATIONS THAT CAN BE POKED ****

NAME	LOCATION	RANGE	REMARKS
CONTROL FLAG	61504	0-1	0=OFF(normal), 1=ON
WIDTH	61505	0-255	1 less than actual width
LINEFEED	61506	0/10	Code used for linefeed
LEFT MARGIN	61507	0-255	0=not used
INVERSE FLAG	61508	0-1	governs inverse printing
GRAPHICS FLAG	61509	0-1	0=OFF, 1=ON
FLIP FLAG	61510	0-1	see text
GRAPHTAB	61512-61521	--	see text
BIT IMAGE CODE	61515	75/76	"K" or "L" etc... see text

Each of the above locations will now be discussed in detail. First note that all below CONTROL FLAG only have effect if the CONTROL FLAG is OFF. And the following only have effect if the GRAPHICS FLAG is ON: INVERSE FLAG, FLIP FLAG, GRAPHTAB, and BIT IMAGE CODE.

THE CONTROL FLAG should be poked with 1 if you want to send control codes to your printer. When you have done so, you should poke it with 0. If the flag is 1, all codes are sent directly to printer without interpretation by PRX.

WIDTH governs the maximum line width. NOTE that this MUST be equal to or less than the maximum number of characters that your printer is capable of printing on a line in the BIT-IMAGE mode as selected by the BIT IMAGE CODE. See discussion of same.

If WIDTH is too big, you may get "spill-over". This means that if you attempt to send more characters than will fit on a line, your printer may "drop out" of bit-image mode and print excess characters as "garbage".

LINEFEED should be 0 or 10, depending on whether or not your printer's AUTO-LINEFEED switch is OFF or ON.

LEFT MARGIN governs the number of spaces that will automatically be sent at the start of each new line. IF your printer has a left-margin control-code sequence available, then you may elect to use that INSTEAD OF the "LEFT MARGIN location"... in which case it should contain 0.

POKEABLE LOCATIONS, continued

The INVERSE FLAG governs whether or not characters are printed white-on-black. This flag should normally be 0 (off). It is turned on by an imbedded INVERSE 1 in an LPRINT statement, and turned off by an INVERSE 0. Note that the TRUE VIDEO and INVERSE VIDEO keys can be used within quotes.

PRX ignores other attribute codes such as PAPER, INK, BRIGHT and FLASH.

The GRAPHICS FLAG governs whether or not your printer's BIT IMAGE MODE is used for LPRINTING/LLISTING. If this flag is OFF (as it would have to be if your printer HAS no bit-image mode) then your printer's built-in fonts are used, and 2068 graphic and UDG characters are printed as a question-mark.

But if the GRAPHICS FLAG is ON, then any previously-selected printer font (elite, pica or whatever) is IGNORED and 2068 characters are used instead, for all printing.

The FLIP FLAG governs whether characters are printed rightside-up or upside-down. Basically, if you find your characters are upside-down, then POKE 61510, NOT PEEK 61510.

GRAPHTAB is a table of control codes used by PRX in accessing your printer's bit-image modes. Do not fiddle with this table, except for location 61515, unless you know what you are doing. This table can be customized in many ways for many different printers. Most printers have two main bit-image modes: normal density and high-density, which can be selected simply by changing one byte of the table. But my printer, for example, has 4 additional bit-image modes, some of which require other changes to the table.

BIT IMAGE CODE will normally be 76 (high density), but you may change it to 75 (normal density).

For most 80-col printers, in HIGH-DENSITY bit-image mode, there are 960 horizontal dot positions. Since 2068 characters are 8 dots wide, this means that 120 such characters can be printed on a line, if LEFT MARGIN=0.

In NORMAL DENSITY, only 60 characters will fit, again if LEFT MARGIN=0... and LESS than 60 if LEFT MARGIN is more than 0.

Thus, if you want to use normal density, and you want a left margin of 8, then you should set WIDTH to about 52.

NOTE that the LEFT MARGIN function, and the 2068 controls TAB and AT, work by sending a series of spaces (whether or not GRAPHICS FLAG is ON)... and the horizontal size of the spaces is determined by the current printer font (elite, pica or whatever). This is a flaw. I should be using an 8-DOT space if graphics flag is on. This minor flaw will get corrected eventually.

*** the end ***

FONTMAN TEST

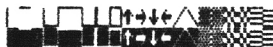
This is Font 6 of Lib 1.

This is **test of** inverse.

Now let's try graphics characters: **..M LLA**

Now let's try some UDGs:

```
Now is the time for
all good men and
women to come....
```



123456789112345678921234567893123456789412345678951234567896123

+++++
+++++

Now let's try LLIST with this font.

```
1 REM FONT MANAGER vld
2 REM by Jack Dohany
7 POKE VAL "23609",a
8 BORDER z: PAPER z: INK VAL "7"
9 GO SUB VAL "1090": GO SUB VAL "1000"
10 GO TO VAL "50"
11 DEF FN A(x)=x-xx*INT (x/xx)
12 DEF FN B(x)=INT (x/xx)
20 LET font=a+PEEK fontno: PRINT AT a+a,z;"Font #";font;" of ";
fmax+a,"': RANDOMIZE USR prfont: RETURN
50 CLS
60 PRINT AT z,VAL "7";"*** MAIN MENU ***": GO SUB t+t
75 PRINT "EDIT","SAVE","NEW #","LOAD","UP 1#","GETROM","DN 1#
","BACKUP prog+lib"
80 PRINT "PUT","X: " AND type;"tape" AND type AND NOT disc;"di
sc" AND type AND disc,"FETCH (";PEEK b1;CHR$ PEEK b2 AND PEEK b
1;)" "CATALOG" AND type
85 PRINT "QUIT TEST","ACTIVATE "; "y" AND active;"n " AND NOT
active
90 IF disc THEN OUT VAL "244",a
100 POKE laskey,z: PRINT #z;AT a,z; FLASH a;">";
101 IF NOT PEEK laskey THEN GO TO VAL "101"
105 RANDOMIZE USR click: LET k$=CHR$ PEEK laskey
110 IF k$(a)>"Z" THEN LET k$(a)=CHR$ (CODE k$(a)-VAL "32")
115 IF k$=CHR$ 13 THEN GO TO t
120 PRINT #z;CHR$ 8; INVERSE a;k$:
121 IF k$="A" THEN GO TO VAL "150"
122 IF k$="B" THEN GO TO VAL "500"
123 IF k$="C" AND disc THEN CAT " ",: GO TO VAL "100"
124 IF k$="D" OR k$="6" THEN GO TO VAL "440"
125 IF k$="E" THEN GO TO VAL "5000"
126 IF k$="F" THEN GO TO VAL "950"
127 IF k$="G" THEN GO TO VAL "700"
132 IF k$="L" THEN GO TO VAL "300"
134 IF k$="N" THEN GO TO VAL "400"
136 IF k$="P" THEN GO TO VAL "900"
137 IF k$="Q" THEN PRINT AT VAL "21",VAL "5";"to resume, GO 10
140 " : STOP
139 IF k$="S" THEN GO TO VAL "200"
140 IF k$="T" THEN GO TO VAL "800"
141 IF k$="0" OR k$="7" THEN GO TO VAL "460"
144 IF type AND k$="X" THEN LET disc=NOT disc: GO TO t
149 GO TO VAL "100"
150 LET active=NOT active: GO SUB VAL "165": GO TO t
```